

4721 Griscom St.
Philadelphia, Pa.
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115 W. Main Street
Thurmont, Md.
21788

Dear Dr. Orr;

Generally speaking, the ceramic artifacts from the Spring House/Bath House site which I examined 6/22-23/80, consisted of small fragments from a number of different vessels. Most of the sherds were too small to be identified by vessel type and some were even too small to be more closely dated than the range of site occupation. A few fragments could be matched with other fragments, but only one vessel, a stoneware crock from the "Late Period" could be reconstructed sufficiently to suggest that it had been broken in situ. The rest of the ceramics appeared in distribution that is generally characteristic of a "secondary deposit" i.e. materials brought into the site as a constituent of land fill or flood debris. There is no evidence in the distribution of the ceramics to support a hypothesis of site-related use for any of the ceramics other than the stoneware crock mentioned above.

The red earthenwares were ubiquitous representing utilitarian household vessels that were probably made in the local community or in a nearby community. The stonewares also represented ubiquitous utilitarian vessels and were probably made in Maryland or Pennsylvania. Neither the red earthenwares or the grey stonewares could be more closely dated than the range of site occupation. The rest of the ceramics consisted of common English earthenwares of the period ca. 1820-1860 and Oriental export porcelain fragments of approximately the same date range. One small fragment of undecorated pearlware bearing part of an impressed mark can be tentatively identified as the mark of George Phillips. Longport, Staffordshire, England; maker of earthenwares from 1834-1848. Phillips used several impressed or printed marks with pattern name and PHILLIPS (Geoffrey Godden, Encyclopedia of British Pottery and Porcelain Marks, Crown Publishers Inc. New York, 1964, pg. 492#3010).

There seems to be no significant difference in the date range of the ceramics assigned to the "Early Period" and the "Middle Period" while the "Late Period" contains some ceramics contemporary with those associated with the "Middle Period" and the "Early Period" as well as some ceramics of a later (late 19th-20th century) date.

Enclosed please find copies of three articles which I think you may find of use. If you anticipate extensive work in historic sites, I suggest that you might find it useful to acquire the Godden mark book cited above as well as Ralph M. and Terry H. Kovel's Dictionary of Marks: Pottery and Porcelain, Crown Publishers, N.Y., 1953. This book leaves much to be desired compared with Godden's mark book, but it is one of the few mark books which includes marks of a number of 19th century American potteries. I have also enclosed my bill and expense receipts.

Sincerely,

Betty J. Cosans
Betty J. Cosans

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A Survey of Traditional Pottery Manufacture in the
Mid-Atlantic and Northeastern United States

Susan H. Myers

From the 17th well into the 19th century, pottery manufacture in the middle-Atlantic and northeastern United States remained highly traditional, adhering closely to the customs that immigrant potters brought to the New World. Products, made by hand processes in small, family-operated shops, were meant largely for use in the kitchen, spring house, and tavern. Though form and decoration often were handsome, this was an unselfconscious quality, little affected by fashionable style.

In the 19th century advancing industrialization forced significant alteration in this highly conservative craft. Eastern urban areas felt the revolutionizing influence by the first quarter of the century while many rural potters retained their traditional systems much longer. But by the end of the century the handcraft was, with a few isolated exceptions, a thing of the past.

Earthenware potters operated in Virginia, in the Massachusetts Bay Colony, in New Jersey, and in Philadelphia before the turn of the 18th century making roof tile and household utilitarian vessels. Kiln site excavations in Virginia and Massachusetts suggest that decoration was uncommon though at least one Massachusetts potter, James Kettle, Danvers, slip-decorated his pottery, a refinement not seen on Virginia examples. Forms closely followed their English prototypes.

In spite of the pioneering conditions that prevailed in the 17th century, at least 2 potters attempted to make a ware more sophisticated than simple kitchen earthenware. A cup excavated at the site of Governor William Berkeley's Green Spring Plantation, in Virginia, and apparently made there after 1660, is almost identical in form to tin-glazed wine cups of London manufacture, one of which was found at nearby Jamestown. Though undecorated, the cup, together with wast-

ers of chargers with turned foot-rims also found at the plantation site, suggest that the Green Spring potter may have been trained in and was emulating the majolica styles of London (Watkins 1975:279-80).

Between 1688 and 1692 Englishman, Daniel Coxe employed a London potter to make "white and chiney ware"—certainly tin-glazed ware—at Burlington, New Jersey (Clement 1947:2-8).

The number of potters working in the colonies expanded markedly during the 18th century. The population was growing, and there was a demand for utilitarian earthenware. Though the British attempted to control colonial manufacturing, their restrictive policies often were not well enforced. They were probably little concerned with the type of small local establishments that most of these potteries represented.

At least 300 potters worked in New England before 1800, mainly in the coastal states—Maine, Connecticut, New Hampshire, and in Massachusetts, particularly in Essex County and Charlestown (Figure 1). Common pottery for the storage and preparation of food, roof tiles, drain pipe, and some tableware were made. Decoration, when it occurred, was simple (Figure 2) (Watkins 1959).

While a restrained, English-influenced, pottery was being made in New England, more decorative styles were taking hold in other parts of the country, most conspicuously in southeastern Pennsylvania where 18th century German immigrants placed the firm stamp of their highly decorative traditions on local pottery. Sgraffito and slip-trailed tulips, peacocks, doves, hearts, and inscriptions in German, faithfully transferred the northern European styles to the New World (Figure 3).

Why potters who came to New England brought with them the form but not the decorative vocabulary of England, while German potters so tenaciously retained their decorative traditions has been

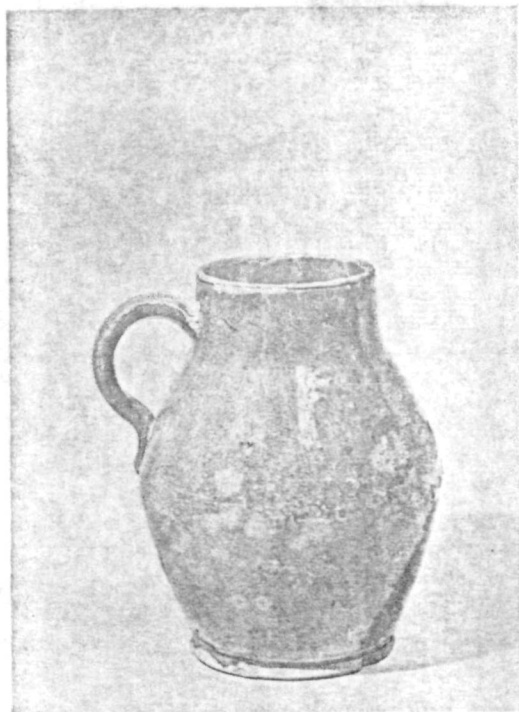


Figure 1. Green-glazed earthenware jug probably made in the Salem, Massachusetts area in the late 17th or early 18th century. Height: 21.5 cm. Lura Woodside Watkins Collection, Smithsonian Institution.

a subject for speculation. The main reason appears to be that 17th century New England potters were working under pioneering conditions. They had little time to devote to the delicacies of decoration; there was a pressing need for their utilitarian products. Later when there was time for refinement, potters had grown so accustomed to the restrained style that it had become the local tradition. In the mid-18th century, on the other hand, German immigrants to Pennsylvania encountered far more settled conditions, and consumers were concerned with the appearance as well as the utility of their household vessels. Potters had the time to execute the elaborately decorated pieces that were part of their tradition (Watkins 1950:1).

Indeed the more settled environment may be responsible for the fact that, throughout the country, American earthenware reached its height as a beautiful, if humble, art form during the 18th century. A distinctive American style evolved though it still showed the influence of Continental and English traditions.

Eighteenth century earthenware manufacturing was centered particularly in port cities where concentrated populations created a demand and where coastal traffic provided ready access to an

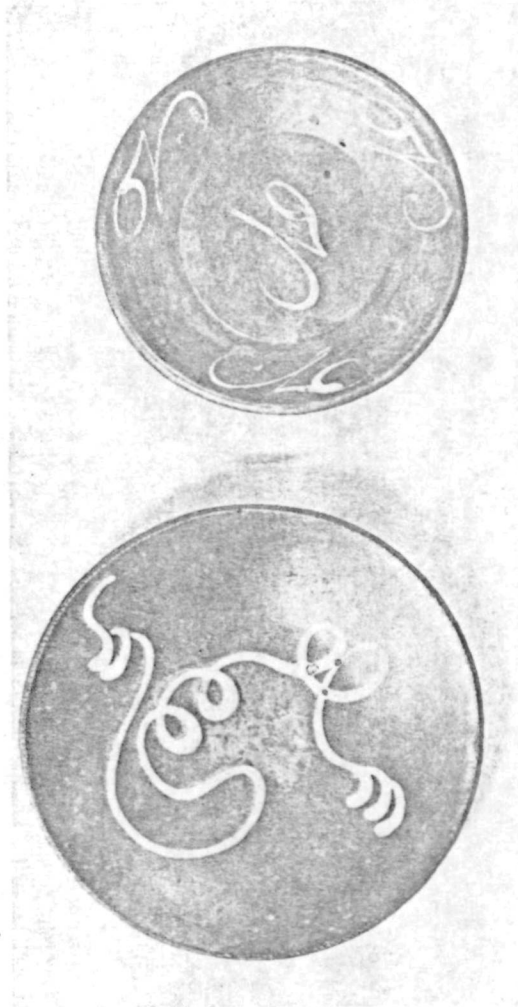


Figure 2. Two New England red earthenware plates. On the top is an eighteenth century pan-shape example probably made in southeastern Massachusetts. (Diameter: 22.8 cm) The example on the bottom was made in Norwalk, Connecticut, ca. 1800-1850 and is characteristic of the shallow molded and notched-edge plates found in New England only in southwestern Connecticut. (Diameter: 28 cm). Lura Woodside Watkins Collection, Smithsonian Institution.

even wider market. Philadelphia was almost certainly the nation's most important earthenware center by mid-century. Potters in other cities advertised their ability to make "Philadelphia earthenware of the best quality (Gottesman 1938: 84)" and we know that Philadelphia ware was sold in New York, Maryland, New England, and undoubtedly elsewhere. Excavations at Franklin Court in Philadelphia have uncovered a variety of dark, clear-glazed, as well as slip-decorated, household forms—porringers, jugs, milk pans, platters,



Figure 3. Sgraffito-decorated jar showing the strong influences of its German antecedents. Possibly made by Philip Lükolz, Pennsylvania. Dated 1788. Height: 20.6 cm. Courtesy, The Henry Francis du Pont Winterthur Museum.

tankards, pipkins—that have been identified as local in manufacture (United States 1974:43-60). English and German influences are evident.

In Manhattan, potters such as John Campbell, Thomas Campbell, Jonathan Durell, and Thomas Oakes made earthenware during the 18th century, but little is known of the ware they produced (Ketchum 1970:20-35). Baltimore, just beginning to grow as a center for the collection, milling, and shipping of wheat in the 1760s, had an earthenware potter by 1763 (Pearce 1959:2-5).

Farther south, in Virginia, the Philadelphia tradition was transplanted to Alexandria, by Henry Piercy, brother of Philadelphia potter Christian Piercy, in 1792 (*Virginia Gazette* 1792). At Yorktown the so-called "poor potter's" output of earthenware in the first half of the century was considerable. Here there was primarily an English but apparently also some northern European influence (Barka 1973:291-318).

One of the most important occurrences in the early development of the American ceramics industry took place in the first half of the 18th century: the introduction of stoneware. Long imported from England and Germany, hard and vitreous stoneware was superior to porous earthenware for most purposes and its establishment as a colonial manufacture was a significant advance.

The first potter to make stoneware in this country appears to have been Johan Willem Crolius who arrived in Manhattan from Neuweid, Germany, in 1718; he probably made stoneware there soon after that date. Crolius was followed by Johannes Remmi, also from Neuweid, who arrived in Manhattan around 1731 (Ketchum 1970:24,30).

New York potters were not alone in the early production of stoneware. In Philadelphia Anthony Duche was making stoneware by 1730 when he applied for a subsidy and monopoly on the manufacture (Figure 4). Though provincial legislatures sometimes did grant the advantage of monopoly rights to struggling industries that they considered important, Duche's application was denied (Watkins 1950:35; Bruchey 1965:70).

Another early site of stoneware manufacturing was the pottery at Yorktown, Virginia, already mentioned. Unlike its Germanic northern counterparts, this stoneware was English in character (Barka and Sheridan 1977). This Virginia pottery illustrates the way in which British manufacturing restrictions might be evaded. In the 1730s, Virginia's Governor William Gooch mentioned a "poor potter" at Yorktown in his reports to the Lords of the Board of Trade. Gooch almost certainly meant to imply that this manufactory was too insignificant to pose a threat to British domination of the colonial market, when in fact it was an extensive establishment. Such passive encouragement was common in the 18th century. Many governors were in sympathy with the ambitions

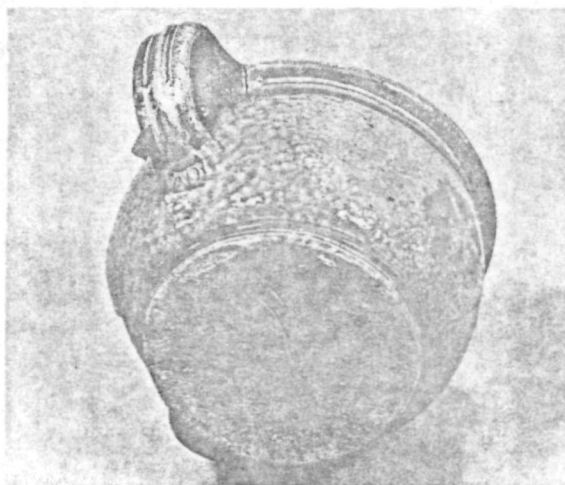


Figure 4. Salt-glazed stoneware chamber pot excavated in Philadelphia and made by Anthony Duche who worked on Chestnut Street, ca. 1724-1762. Independence National Historical Park Collection, Philadelphia, Pa.



Figure 5. Potteries clustered in and around the Raritan Bay in New Jersey where there was a good source of stoneware clay. Sherds collected at the site of the James Morgan pottery in Cheesequake, operating by ca. 1754, suggest that pieces such as this jar with Germanic form and spiral or "watch spring" decoration were made at this earliest known New Jersey stoneware manufactory. Height: 25.6 cm. John Paul Remensnyder Collection, Smithsonian Institution.

of the colonists. Some had profitable connections here; others simply found themselves more popular and life less difficult if they overlooked such transgressions (Watkins and Noël Hume 1967:75-78; Bruchey 1965:69).

Around 1754 James Morgan established a stoneware pottery at Cheesequake, New Jersey, near the South Amboy clay source (New Jersey State Museum 1972). This area, together with Manhattan, would be the major centers for the manufacture in the 18th and early 19th centuries. The Germanic traditions introduced to New York and New Jersey were to dominate American stoneware production (Figure 5).

Though conditions generally were favorable to potteries in the 18th century, obstacles to ceramic development did exist. These had only a limited effect on common earthenware and stoneware makers, but they more seriously hindered efforts to establish fine ware manufactories.

A major problem was the limited and expensive means of transporting raw materials to potteries and finished ware to the market. This posed only a minor problem for earthenware potters who simply situated themselves close to the frequently occurring clay needed for their product. Their market generally was a circumscribed one. Transportation was a greater problem in stoneware

manufacturing since the required clay could be found in few places. Indeed the early success of New York and New Jersey stoneware potteries can be directly attributed to their proximity to stoneware clay beds. Both also had ready access to the coastwise trade and could market their product widely.

Other hinderances to the development of 18th century manufactures were shortages of capital and labor. Labor was in short supply and what capital existed was devoted to the agricultural, shipping, and commercial activities that were the backbone of the economy (Bruchey 1965:16-73).

These problems were of minimal concern to traditional earthenware and stoneware potters whose shops, with few exceptions, were small and unsophisticated operations requiring little capital investment. Many, if not most, rural potters worked at the trade only part time, carrying on farming simultaneously. Labor was supplied by family members sometimes assisted by an apprentice and journeyman.

Fineware manufacturing was far more significantly affected by these capital, labor, and transportation problems. Eighteenth century traditional potters made simple items for the table as well as common vessels for the preparation and storage of food from their coarse red fabric. But, by the last quarter of the century, the Staffordshire, England, potteries were flooding American ports with earthenware for tea and table use. Made of fine cream-coloured clay and variously decorated, these were devastating competitors for the tableware market and posed a challenge that American potters would not be able to meet until well into the next century.

The production of fine tableware required a large capital to cover initial costs and to sustain the pottery through an inevitable period of trial and error. The labor force had to have sophisticated skills; new and unfamiliar types of materials had to be located and economically transported to the pottery. Prices had to be kept low and quality high enough to compete with the products of large English factories. The tariff was too low to provide any protection.

Several attempts at fine tableware production were made but all were unsuccessful. In the second half of the 18th century, potters occasionally noted that they were making cream-colored earthenware. One advertised for "Apprentices to learn the Art of making Tortoise shell Cream and Green colour Plates, Dishes, Coffee & Tea Pots, Cups and Saucers and all other Articles in the Potter's Business, equal to any imported from England (Boston Post 1769)." English potter John Bartlam had opened his "Pottery and China-

Manufactory" in Charleston by 1771 (Prime 1929:112). One of his workmen, William Ellis, introduced the manufacture of queensware at the Moravian settlement in Salem, North Carolina in 1773 (Bivins 1972:24-27). Archaeological materials from Philadelphia suggest that 18th century potters attempted to make fine earthenware on a limited scale (United States 1974:51). Bonnin & Morris were making porcelain in Philadelphia between 1770 and 1772 (Hood 1972).

At the end of the Revolutionary War, the climate for the development of American manufactures was favorable. The economy continued its pre-war process of expansion; English manufacturing restrictions were removed. A sense of patriotism and pride in American industries was evident though it offered little concrete encouragement.

Stoneware was in a particularly advantageous position. "Preceding the glorious Revolution, freights on goods from England being on the Value, to most of the then colonies, all bulky and low priced articles were imported so exceedingly cheap as to discourage manufactures of them among us of any importance (Pennsylvania Mercury 1785)." After the war, freight was levied by weight. Thus, imported stoneware, low in value but high in weight, became costly—a perfect opportunity for the American stoneware potter (Watkins 1950:80).

At the same time, there was a growing concern about the danger from lead, needed as a flux in earthenware but not in stoneware glazes: "Even when it [lead glazing] is firm enough, so as not to scale off, it yet is imperceptibly eaten away by every acid matter; and mixing with the drinks and meats of the people, becomes a slow but sure poison, chiefly affecting the nerves, that enfeebles the constitution, and produces paleness, tremors, gripes, palsies, &c. (Pennsylvania Mercury 1785)."

Early in the 19th century American ceramics, like American manufactures generally, received a great boost. Fearing involvement in the French and English difficulties that had begun in 1793, President Thomas Jefferson, in December 1807, imposed an embargo prohibiting buying or selling with belligerent nations. American shipping and commerce suffered but manufactures profited.

The restriction of imports and the subsequent shift of capital to manufacturing efforts was advantageous to the already prospering traditional earthenware and stoneware potteries. It also encouraged the establishment, especially in Philadelphia, of several manufactories once again attempting to make fineware but this time with the advantage that English ceramics were temporarily

off the market. An important effort was the Columbian Pottery, a "queensware" manufactory opened in 1808 in Philadelphia by Binny & Ronaldson, typefounders, who provided the capital, and Alexander Trotter, potter, who provided the expertise. Another was John Mulloony's Washington Pottery opened in the same city in 1810 for the manufacture of "Red, Yellow, and Black Coffee Pots, Tea Pots, Pitchers, etc. (Philadelphia Aurora 1810)." and making "Turn'd and Pressed Ware" by 1812 (Philadelphia Aurora 1812). No examples have been definitely attributed to any of the fineware potteries of this period. An 1807 advertisement in a Savannah newspaper, however, indicates that the Columbian Pottery intended to make a light-bodied earthenware in the English style (Savannah Public Intelligencer 1807). Other potteries, also following English fashions, made their tableware from the traditional red clay, probably covering it with a white slip when they intended to directly imitate creamware (Myers 1977:10-20).

Though this period witnessed the most extensive effort at American fineware production up to that date, all ventures were short-lived, their success tied to the advantage that the embargo and War of 1812 provided. Conditions still were not conducive to the establishment of an American fine ceramics industry on a firm footing.

These potteries illustrate a phenomenon that was evident as early as 1688 when Dr. Coxe established his "chiney ware" factory in New Jersey. When fine tableware in imitation of English prototypes was attempted, this usually was done by foreign potters such as William Ellis in Salem, or by entrepreneurs such as Binny & Ronaldson in Philadelphia who were looking for a profitable investment. Traditional potters stuck to their traditional products. They were reluctant to involve themselves in such speculative enterprise probably both because it was alien to their conservative thinking and because they understood the difficulties involved better than outsiders did.

Comments made by potters in the 1820 Census of Manufactures make it clear that the post-war renewed influx of imported goods had caused serious setbacks in many manufactories. (United States 1820). But in the 1820's, the industry recovered and began to prosper again.

Throughout the economic ups and downs of the late 18th and early 19th centuries, stoneware as well as earthenware potteries continued to be established in the northeastern and mid-Atlantic states. But the durable stoneware together with cheap English whiteware were beginning to dominate the market, forcing traditional earthenware potters to either diversify, move to the frontier



Figure 6. Probably made in New York in the late 18th or early 19th century, the carefully detailed incised and cobalt-filled decoration on this pitcher suggests that it was intended to be a "presentation piece," a unique gift. Height: 35.8 cm. John Paul Remensnyder Collection, Smithsonian Institution.

where they had fewer competitors, or turn to other occupations.

During the first quarter of the 19th century the stoneware industry reached a peak of development. A growing population meant a greater demand and the movement of that population into the interior led to the building of roads over which clay and pots could be hauled. The improvement of all types of transportation meant more speedy and economical shipping.

The period between the end of the Revolutionary War and about 1825 produced some of the finest examples of American stoneware. Handsome and robust forms, still owing a great deal to their German forerunners, nonetheless were becoming "Americanized" on this side of the Atlantic (Figure 6).

During this period, Manhattan, New York, and the Amboy area of New Jersey, with their optimal locations, were sites of a pottery boom. Near the Amboy clay source, Thomas Warne and his son-in-law Joshua Letts, were partners in a stoneware factory between 1805 and 1813; James Morgan, Jr., Jacob Van Wickle, and Branch Green were in business as makers of stoneware in Old Bridge by 1805 (Figure 7); and in 1801 Xerxes Price bought property in Roundabout, now

Sayreville, where he built a stoneware pottery (New Jersey State Museum 1972).

In Manhattan, the Remmey and Crolus families continued to dominate stoneware production in the first half of the century, carrying on the Germanic traditions of their ancestors. They had some competition from Thomas Commeraw who opened a pottery near the older shops in 1797. He and David Morgan alternately operated the pottery until about 1819 (Figure 8) (Ketchum 1970:20-42).

Elsewhere in New York, one of the nation's major stoneware producing areas had begun to develop along the Hudson River, at cities such as Poughkeepsie, Athens, Albany, and Troy. Along the Erie Canal, completed in 1825, and later along its tributaries, potteries were drawn into the western parts of the state. Though earthenware continued to be made in these areas, it was overshadowed by the important stoneware industry (Figure 9).

Since there was no stoneware clay in any of New England's 6 states, potters there were particularly bound to the waterways. Before the



Figure 7. The "man-in-the-moon" on the front and back of this jar is generally associated with the pottery established at Old Bridge, New Jersey in 1805 by Branch Green, Jacob Van Wickle, and James Morgan, Jr. However, the bands of coggled decoration are more commonly found on pieces made at the nearby Warne and Letts pottery. Height: 28 cm. Smithsonian Institution.

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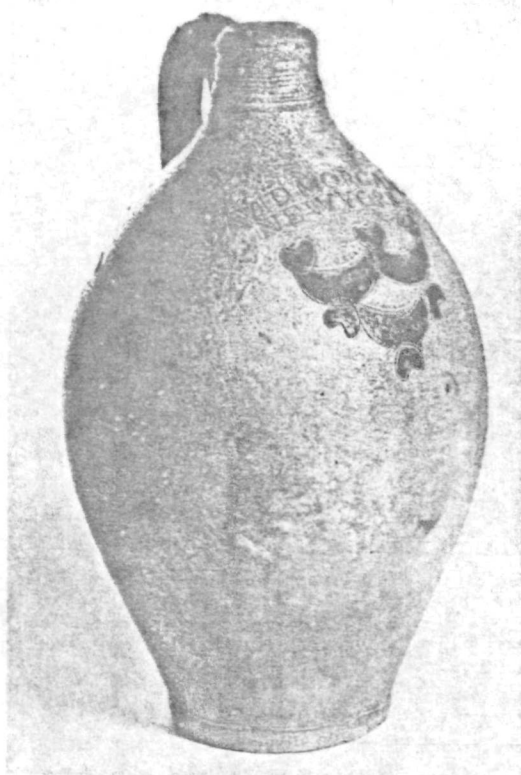


Figure 8. This jug, made by David Morgan in Manhattan (1795-1803), illustrates the strong Germanic influence that dominated American stoneware production in the 18th and early 19th centuries. Height: 32.1 cm. John Paul Remensnyder Collection, Smithsonian Institution.

Revolution, the most successful stoneware manufacturer appears to have been Adam States who by 1751 was working at Greenwich, Connecticut, within easy reach of the clay beds at Huntington, Long Island (Watkins 1950:178-83).

During the 19th century, potteries were established in coastal cities such as Norwalk and New Haven, Connecticut, and were drawn inland along the Connecticut River.

Vermont, though it was inland, had access to stoneware clay via the Hudson River. By 1810 stoneware was made in both Dorset and Bennington (Osgood 1971:75).

Earthenware potteries continued to spread into the interior in the first quarter of the century, often threatened by new stoneware manufactories. Potters trained in Massachusetts carried their traditions into New Hampshire. Charlestown, Massachusetts, a center for earthenware before the Revolution, was revived as a stoneware center in the 19th century. Jonathan Fenton and Frederick Carpenter, apparently with financial backing from merchant William Little, had operated a



Figure 9. Stoneware water cooler marked "Mr. Oliver Gridley/Newburgh July 1st, 1825." Though no stoneware potteries are known to have operated at Newburgh, New York, the piece almost certainly was made at one of the towns along the Hudson River where stoneware was manufactured. Height: 31 cm. John Paul Remensnyder Collection, Smithsonian Institution.

stoneware pottery at Boston between 1794 and 1796 (Figures 10 and 11). By 1803 and until at least 1810, Carpenter was potting at nearby Charlestown, and in 1812, he went into business there with Barnabas Edmands. This successful manufactory was active throughout the century (Watkins 1952:1052-57).

Though Connecticut became an important state for the manufacture of stoneware, earthenware was produced widely until late in the 19th century. In southwestern Connecticut, earthenware was distinguished by a Germanic influence due to the state's proximity to the Middle-Atlantic region (Figure 2).

Farther south—in Pennsylvania, Maryland, and Virginia, earthenware traditions remained strong and, as in the northeast, its practitioners moved inland to newly settled areas. A stoneware industry was developing though generally not as extensively or on such a large scale as in New Jersey, New York, and New England.

Throughout the 19th century, handsome and elaborate traditional Germanic pottery dominated earthenware production in southeastern Pennsylvania. Forms were thrown, molded, modeled; sometimes the walls were reticulated, the handles

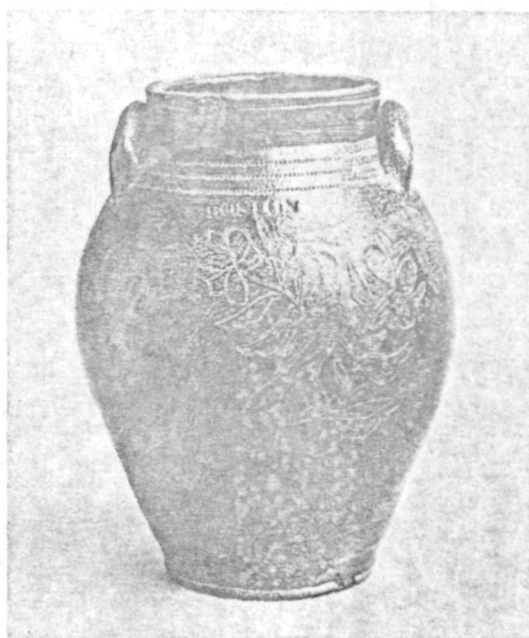


Figure 10 & 11. Lura Watkins has pointed out the distinctly different potting styles of 18th century Boston potters Frederick Carpenter and Jonathan Fenton. The precise and symmetrical form on the right with handles close to the neck she attributes to Carpenter (Height 26.6 cm, Lura Woodside Watkins Collection, Smithsonian Institution) while Fenton's work is seen in the bolder form on the left with tall collar and free-standing handles (Height: 37.5 cm., John Paul Remensnyder Collection, Smithsonian Institution).

rope-twisted. Pieces were decorated with great imagination by slip-trailing, brushing, sprigging, and sgraffito techniques. For decorative subjects potters favored birds, flowers, and human figures, on and off horseback (Figure 12). But the range of subjects was varied and might include dogs, fish, houses, stags, foxes, and cows. Sentiments of patriotism, love, or piety were expressed by symbolic illustration or in German, and sometimes English, inscriptions.

Pennsylvania potters took full advantage of the adaptability of earthenware to a great variety of forms. Roach traps, stove foot rests, oil lamps, shaving basins, ink stands, tobacco jars, whistles, and rattles supplemented more common household products.

The traditions of the Pennsylvania German potters had an effect on surrounding areas. And as the population moved west and south, the southeastern Pennsylvania traditions went with it—through Pennsylvania, into western and central Maryland, to West Virginia (Figure 13), and into the Shenandoah Valley.

Stoneware followed a similar course. The Middle-Atlantic traditions, which derived ultimately



Figure 12. Sgraffito-decorated plate attributed to Johannes Neesz of Tylersport, Pennsylvania. The inscription translates: "I have been riding over hill and dale and everywhere have found drink." Diameter: 31.7 cm. Smithsonian Institution. ca. 1800-1825.

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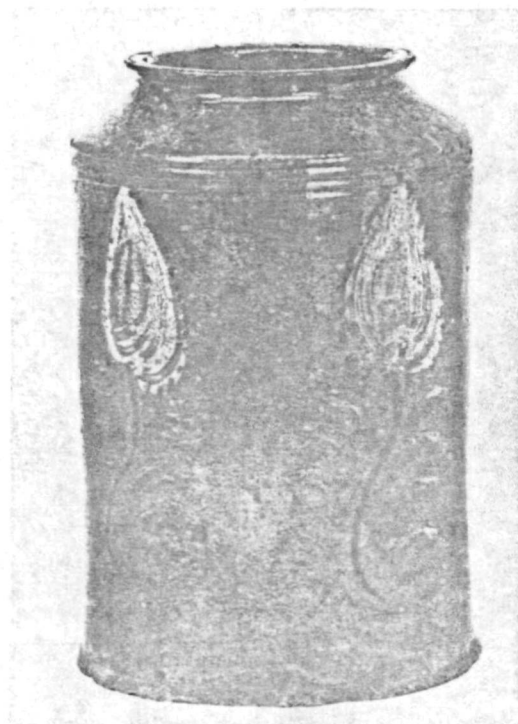


Figure 13. Glazed red earthenware preserve jar made in Morgantown, West Virginia about 1800. Height: 26 cm. Gift of Dorcas Haymond, Smithsonian Institution.

from German origins, moved west and south influencing the type of ware made in potteries over much of Maryland, Virginia, West Virginia, and Pennsylvania.

In the 19th century substantial stoneware industries operated in the Mid-Atlantic port cities. In Manhattan, the Croluses were in business until 1849, the Remmey's until about 1831 (Ketchum 1970:225-26). Branch Green, from New Jersey, established a stoneware manufactory in Philadelphia by 1809. In 1827 the pottery was bought by Henry Remmey, Jr., and by mid-century there were 4 stoneware potteries there (Figure 14) (Myers 1977:1-102). In Baltimore the manufacture was introduced by 1794 and it remained important there throughout the next century (Figure 15) (Pearce 1959:30-83).

During the first half of the 19th century, traditional potteries were widespread and many were very successful, but urbanization, improvements in transportation, the evolution of new technologies, and the widening of domestic markets encouraged the advance of industrialization in this as well as other manufactures. Changes generally occurred first in eastern urban potteries



Figure 14. John Brelsford was a maker of household and chemical stoneware in Philadelphia between 1846 and 1858. Height: 38.5 cm. Private Collection.



Figure 15. Made at the pottery of Thomas Morgan and William H. Amos, potters who worked together in Baltimore, 1812-1822, this handsome jar is incised on the base: "Morgan & Amos/Makers/Pitt Street/Baltimore/1821." Private Collection.

but eventually reached more isolated rural shops as well.

Many new types and styles of ware were introduced in the 1820s and 1830s and were adopted widely as potters adapted to the changing times in the next 2 decades. Light-bodied fineware copying the English styles had long been attempted

and now showed signs of market success. Made in a limited way in New Jersey by the late 1820s, molded decorative ware was widely produced by the 1840s resulting in a proliferation of "White, Yellow, and (especially) Rockingham" ware from different factories.

Growing markets made it economically feasible for American potters to make such relatively sophisticated ware with the assurance that there would be some demand for their products. Continuing improvements in transportation made it less expensive for potters to transport raw material to their manufactories and finished ware to the widening market. The migration of a substantial number of workers from the Staffordshire potteries during the 1840s provided much of the skilled labor force essential to fineware manufacture.

The first steps toward the production of molded decorative ware had been taken in the 1820s when potters in Philadelphia, Baltimore, Whately, Massachusetts, New Jersey, and probably elsewhere were making black-glazed tableware—primarily teapots—in some quantity (Figure 16). Though these were made in the coarse red fabric of the traditional earthenware potter, they were finer ware for table use, and they competed well with imported counterparts. Very importantly, some of them were made in molds, which represented a technological advance long in use in English and Continental factories and one that was essential to the success of the new mass-produced



Figure 16. Black-glazed red earthenware teapot excavated at the site of the Thomas Crafts pottery in Whately, Massachusetts. Crafts was making black-glazed teapots there between about 1822 and 1832 (Watkins, *Early New England Pottery*). Height: 15.2 cm. Lura Woodside Watkins Collection, Smithsonian Institution.

decorative ware (Myers 1977:24-27, 76-79, 106-08).

The production of firebrick—needed for America's expanding industries for such things as furnace linings and boiler settings—was adopted by many urban potteries between the 1820s and the 1840s. The refractory material of which the bricks were made was soon in use for a great variety of other industrial as well as domestic purposes as the 1848 advertisement in Figure 17 indicates.

Portable earthenware furnaces, made by Abraham Miller in Philadelphia as early as 1823, became major products in the more "progressive" shops in the 1830s and 1840s. Simple devices of the type illustrated in Figure 18 were recommended for laundering and cooking, apparently primarily in the summer to replace conventional stoves and fireplaces that used a lot of fuel and kept the house hot (Myers 1977:110; Alexandria Gazette 1824).

Products common to the industrializing shops, in the second half of the 19th century were terra

79

FIRE BRICK MANUFACTORY.

SALAMANDER WORKS,
Corner of Hudson and Hawk Streets,
ALBANY.

FIRE BRICK, Nos. 1 and 2,
constantly on hand, and warranted to be of the best
quality.

CUPOLA BRICK,
of various shapes and sizes; also,
KEY, JAMB AND WEDGE,
and the different kinds used in Rolling Mills and Blast
Furnaces.

Circular Brick for Stoves, and Stove Brick,
made to any desired pattern, promptly, and warranted.

Green House and Oven Tile,
ARCHES,
for Stone Ware Kilns, Lime Kilns, Door Ways, &c.

Fire Clay, Fire Sand & Kaolen,
A GOOD SUPPLY.

Orders are respectfully solicited, that the quality of
our manufactures, as well as our punctuality, may be
tested.

HENRY & VAN ALLEN.

Figure 17. This advertisement from Hunt's Albany Commercial Directory, for 1848-9 shows the considerable variety of fireclay products that were marketed in the 1840s.

cotta ware, chemical stoneware, and vitrified drain pipe.

Stoneware, once the new product that posed a threat to earthenware was now itself threatened—

ALBANY
Portable Furnace Factory,
 NO. 230 WASHINGTON-ST.
JACOB HENRY
 PROPRIETOR,



Will furnish his customers with all sorts of sizes of PORTABLE FURNACES, delivered at his factory in Albany.
 He is ready to furnish his customers and the public generally, with any quantity, at a moment's warning; and will warrant them equal to any ever offered in this market. The factory of Mr. Henry is the first one of the kind ever established in Albany, and is the only one where Portable Furnaces are at present manufactured.

June, 1833.

Figure 18. Jacob Henry's advertisement in *Child's Albany Directory, and City Register, for 1833-4* includes an illustration of a portable furnace. These simple devices were made by many American potters in the second quarter of the 19th century.

by competition within the trade from the growing number of stoneware manufactories, by granite ware, mason jars, and eventually by refrigerators, large scale dairying, and commercially canned goods. Many potters continued to make household stoneware in addition to, or instead of, more industrial products. But, stimulated by a need to compete, and aided by new mass-production processes, their products changed in shape and decoration. Forms became increasingly straight and mechanical reflecting less and less the mark of the potter's hand. Decoration, though often handsome, nonetheless had become a means of outdoing competitors rather than a spontaneous complement to the form.

An important part of the change taking place in the potteries was the substitution of devices such as molds and extruders for the work once done by the hand of a skilled craftsman. As the skill went out of production, traditional hand-craftsmen were replaced by a new and cheaper semi-skilled labor force.

Industrialization had made significant inroads by 1850. Traditional earthenware and stoneware potteries continued to operate for many decades

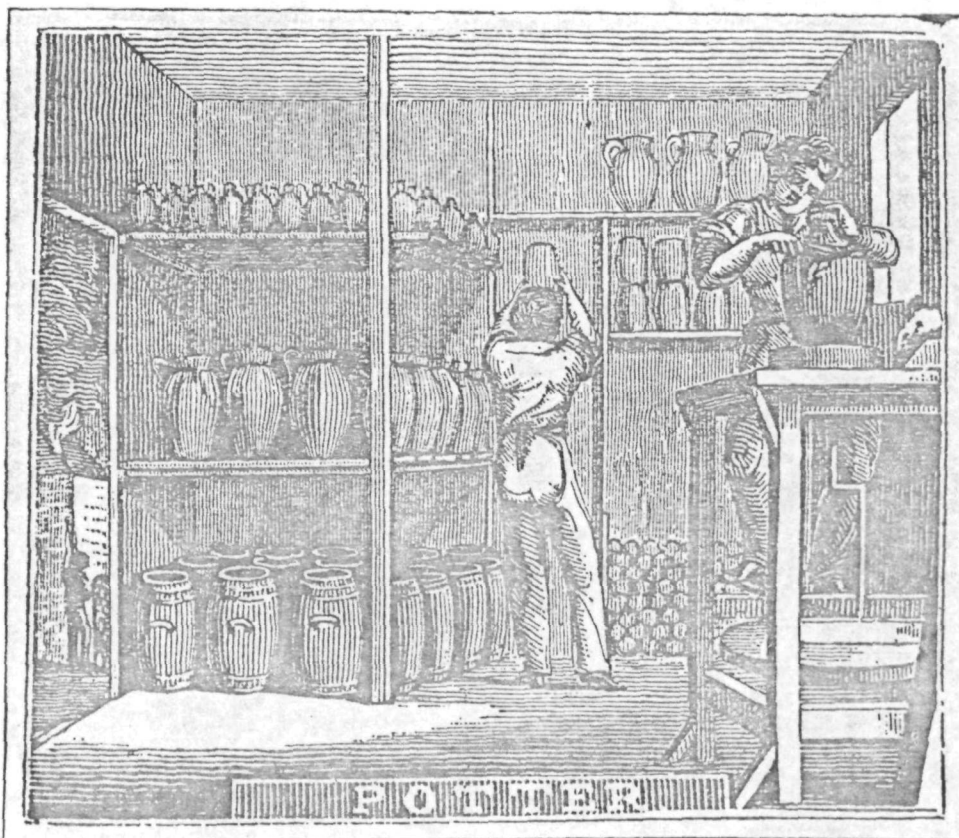


Figure 19. This illustration from *The Panorama of Professions and Trades* by Edward Hazen (Philadelphia: 1836) shows a traditional potter at work on a treadle-operated wheel, an English type that was widely used in American potteries. The kiln can be seen through the doorway on the left.

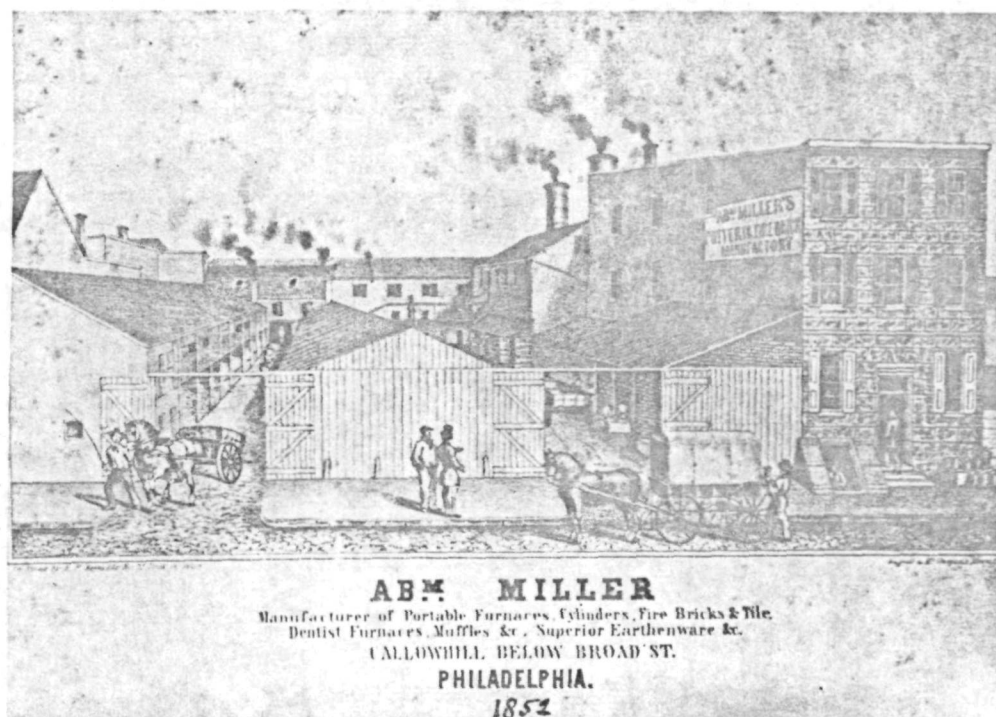


Figure 20. By 1852 Abraham Miller had expanded his once small traditional Philadelphia pottery to the substantial factory shown here. Collection of Mrs. Joseph Carson.

but their numbers were continually diminishing. Small family potteries, like the one illustrated by Edward Hazen in 1836, (Figure 19), operating with the assistance of an apprentice or a journeyman, were existing side-by-side with factories such as Abraham Miller's Pottery and Fire Brick Manufactory (Figure 20) which employed 45 workers by 1850 (United States 1850). Products, market, labor force, shop organization, and technology all were changing and the handcraft was destined to be entirely replaced by an industry.

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Stoneware from Fayette, Greene, and Washington Counties, Pennsylvania

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Stoneware has long been recognized by historical archaeologists as a common artifact at many sites. At sites dating from the 17th and 18th centuries, it was generally of European origin while at 19th century sites stoneware was usually of local or at least American manufacture. It was the fact that nearly all the stoneware recovered from excavations at 19th century southwestern Pennsylvania sites had been locally produced and that documentation concerning its production was unavailable that a study of stoneware was undertaken at California State College, California, Pennsylvania.

The initial study had 2 objectives. First an attempt would be made to learn the specific attributes of stoneware that would aid the archaeologist in identifying sherds as to their technique of manufacture, method of motif application, distinguishing motif characteristics, and vessel form and function. After consulting standard works on American pottery such as John Spargo, *Early American Pottery and China* (1926) and John Ramsey, *American Potters and Pottery* (1939) and the more recent publications on stoneware by Donald B. Webster, *Decorated Stoneware Pottery of North America* (1971) and Cornelius Osgood, *The Jug and Related Stoneware of Bennington* (1971), it was clear that data on technical aspects of stoneware manufacture were plentiful, but data relating to the motif characteristics at various potteries ranged from sparse to non-existent.

The other main study objective was to develop an historical profile of the stoneware potteries of Southwestern Pennsylvania. It was a well-known fact that in the vicinity of New Geneva and Greensboro, Pennsylvania, about 50 miles south of Pittsburgh, Pennsylvania, there had existed a sizable deposit of blue or gray clay suitable for

the manufacture of stoneware. Also it was commonly known in southwestern Pennsylvania that several, both small and large, potteries had produced a variety of stoneware pieces during the 19th century.

Since extant literature on the potteries was scarce, it was apparent that if excavated stoneware sherds were to be identified, a data base would have to be established.

The result of a search of the historical documents including county histories, atlases, tax records, wills, property deeds, and census records was the compilation of a minimum list of 15 stoneware pottery locations, within a radius of about 32 miles of the clay source, which operated from as early as 1850 until near WWI. There were 2 site locations in New Geneva, 1 in Springhill Township outside New Geneva, 4 in Greensboro, 1 in Rices Landing, 1 in Fredericktown, 1 in West Brownsville, 1 in Washington, 1 in Uniontown, 1 in Perryopolis, and 1 in East Pike Run Township, Washington County, near California. There was at least 1 site in Waynesburg, but no historical data on the site was located (Michael and Jack 1973:365-82). A further examination of the same data showed that over a 30 year period (1850-1880) the 15 potteries had a total of at least 36 different adult males working in some phase of the manufacturing.

Comparative data on the potteries within southwestern Pennsylvania and between the southwestern Pennsylvania potteries and those of all of Pennsylvania is difficult to acquire. About the only source of such data is the Manufacturing Schedules of the U.S. Decennial Census, and, unfortunately, recording inconsistencies from county to county and from census to census makes these data often of minimal value (cf., Table 1). However, some observations about the south-

Table 1

Stoneware Production in Fayette, Greene, and Washington Counties, Pennsylvania, 1860, 1870, 1880. From U.S. Decennial Census Manufacturing Schedules.

Category	Capital Invested	Clay Used (Tons)	Cost of Clay	Salt Used (Barrels)	Cost of Salt	Cobalt Oxide Used (Pounds)	Cost of Cobalt Oxide	Wood Used (Cords)	Cost of Wood	Coal Used (Bushels)	Cost of Coal	Slip Clay Used (Barrels)	Cost of Slip Clay	Horsepower	Number of Turning Wheels	Number of Kilns	Number of Hands (Adults)	Number of Hands (Children)	Average Monthly Labor Costs	Number of Months (Producing)	Annual Product (Gallons)	Annual Product (Dollars)	Annual Product of Other Articles (Dollars)	Total Annual Product (Dollars)
1850																								
William Boughner, Greensboro	Total Materials—\$175.00 per year																2		50					1300
1860																								
Daniel Boughner, Greensboro	100	200	250	8	20	30	10	250	437								10		200					4000
James Hamilton, Greensboro	6000	600	800	50	75	130	50	700	1000								22		550		176000	11512	4000	15512
Henry Atchinson, New Geneva	300	100	150	10	20	75	20																	3600
William Winfield, East Pike Run Twp.	1500	20	159														6		23					4000 (Stoneware, etc.)
Donnaho & Beall, Fredericktown	1300	120	360					140	210								2		25		33000	2800		2800
1870																								
James Hamilton & Co., Greensboro	13000	700	1300	55	125			650	1850	6000	275			Steam 12	11		18	6	834	12	200000	18000	1025	19025

Hamilton & Jones, Greensboro	6000	400	720	50	112			500	1500	1500	90			Steam 1			12	1	500	12	150000	12000		12000
Johnston Little & Co., Greensboro	3000	150	300	10	25			130	390	600	30				6		7	1	100	6	28000	2500		2500
A. Conrad & Co., New Geneva	2500	250	400	25	62	50	20	250	562			10	40	Steam 1	3		5		173	12	54000	4860		4860
Leander Dilliner & David L. Davis Springhill Twp., Fayette Co.	900	50	100	5	12	20	8	50	75			3	15	Steam 1	3	1	5		133	6	10000	900		900
Stephen Ward, West Brownsville	400	40	160						125		3				2		2		50	6				800
Isaac Hewitt, Rices Landing	2000	300	700	15	40	50	25	250	700			10	50		3		6		175	12	45000	4500	2070	6570
Hall & Greenland, Uniontown	500	40	80					80	240						3		3		60	10	20000	2200		2200
Thomas Suttle, Perry Twp., Fayette Co.	1000																2		50	12				1000

1880

James Hamilton & Co., Greensboro	25000	Total Material—\$4,000 per year												Steam 12			35	10	667	12				16000
Hamilton & Jones, Greensboro	10000	Total Material—\$3,000 per year												Steam 12			30	6	500	12				18000
Hamilton & Jones Tile Works, Greensboro	2000	Total Material—\$362 per year												Steam 12			3	1	67	6				2000
Isaac Hewitt, Rices Landing	800	Total Material—\$400 per year															3	1	112. 50.					1800

Table 2
Southwestern Pennsylvania Potteries

Year	Number	Capital Invested	Hands (Maximum Adult)	Material Costs	Annual Wages	Product Value
1860	5	\$ 9,200	40	\$ 3,561		\$29,912
1870	9	29,300	60	10,384	\$23,975	48,855
1880	4*	37,800	74	7,762	14,900	37,800

*Including Hamilton and Jones Tile works.

western Pennsylvania industry and how that industry compared to the general stoneware industry of Pennsylvania are possible.

Above is a summary of some of the southwestern Pennsylvania findings (U.S. Decennial Census, Manufacturing Schedules, Fayette, Greene, and Washington Counties, 1860, 1870, 1880).

From the table it seems that the industry production peaked after 1870 and before 1880. By the latter year the local industry had consolidated with only the largest potteries surviving. The capital investment was up from 1870, but the total product had dropped slightly. However, the drop in annual wages and the slight decrease in material costs partially offset the drop in product value. It appears that the companies were attempting to increase production efficiency as reflected in their capital investment and were decreasing labor and material costs. What is missing is quantitative-production figures for 1880 so that a comparison of volume output for 1870 and 1880 could be made. Consolidation and increased capitalization of the local industry possibly indicates increased business competition, for example, from Ohio potteries. From the same data on pottery producers, several other computations were made and conclusions were drawn (Table 3). First, the raw materials consisted of clay purchased by the ton, salt by the barrel, cobalt oxide by the pound, slip clay by the barrels, wood by the cord, and coal by the bushel. Little can be ascertained of the specific technology of pottery making that was not already known about the local industry, but by examining the data, it is clear that sometime between 1860 and 1870 the Greensboro potteries began relying heavily on coal as a fuel. They converted evidently to coal fueled steam-power and coal fired kilns at that time. Since they were located midst the butuminous coal fields of Pennsylvania, such fuel was readily available and undoubtedly low priced.

The same data that allowed the above interpretation to be made also indicated that the cost of producing a storage jar, canning jar, or water cooler averaged about 6.3¢ per gallon and they sold for

nearly 8.9¢ per gallon, thus allowing for a 29.2% profit.

The significance of the southwestern Pennsylvania stoneware industry can perhaps best be realized when the product value of those potteries is compared with the total Pennsylvania stoneware production figures (U.S. Decennial Manufacturing Schedules, Pennsylvania).

Table 4 shows that southwestern Pennsylvania stoneware production accounted for a significant proportion of Pennsylvania's stoneware production in both 1860 and 1870. The magnitude of southwestern Pennsylvania stoneware manufacture is even clearer when the distribution of Pennsylvania stoneware production is depicted county by county. The greatest production concentration in 1860 was in Fayette, Greene, and Washington counties.

Table 3

\$1.90	per ton of clay
2.35	per barrel of salt
.44	per pound of cobalt oxide
2.84	per cord of wood
.05	per bushel of coal
4.78	per barrel of slip clay
.063	per gallon of stoneware produced
.089	value of product produced per gallon
.026	profit per gallon of stoneware

Table 4

Southwestern Pennsylvania and Total Pennsylvania
Stoneware Production*

Year	SW Pa.	Pennsylvania	% of Pa. Total from SW Pa.
1860	\$29,912	\$ 70,512	42.4%
1870	\$48,855	\$142,717	34.2%

*The Pennsylvania figures are based on census entries for stoneware manufacture or entries that showed the use of salt in pottery manufacture. Also in 1880 the type of pottery was not indicated, i.e., earthenwares, stonewares, and dinnerwares were lumped together, so comparative figures for that year were unavailable.

In 1870, with the exception of Philadelphia County, the largest production area was Fayette and Greene counties.

After the data from the manufacturing schedules seemed to be exhausted of analytical information, several simple statistical operations were performed on the occupational tax assessment data for the towns and townships where the potteries were located and these results were compared with the same measurements for the entire taxable population of the same units. Likewise, the standard deviation for the data was calculated and confidence tests were performed to ascertain whether potters differed significantly for the general population of the towns and townships in which they worked. The results showed that the potters did not differ significantly at either the .05 or .10 levels of confidence. In fact, the mean and median occupation tax assessments for the potters paralleled those of skilled craftsmen as a group (Pennsylvania, Fayette and Greene Counties, Treasurer's Office, Property Rolls, 1850-1900).

The collection and analysis of historical documentation could have been carried further, but since an expansion of such a study would not bring the identification of stoneware sherds closer, it was not carried further—adequate information on which to begin a study of stoneware attributes had been collected. At that point the second thrust of the overall study was started.

Since it was unknown which manufacturing techniques, types of motif application, and motif elements were diagnostic for the identification of stoneware as to pottery site, as comprehensive an attribute list as possible was compiled for extant vessels from the sites under study. Fortunately, Waynesburg College, Waynesburg, Pennsylvania, had a large representative collection of the wares. Information from each of over 200 pieces was recorded.

After basic cataloging data had been listed, each piece was classified as to its basic purpose. At the several southwestern stoneware potteries, the products had been storage jars, canning jars, water coolers, jugs, pitchers, spittoons, doll's heads, umbrella stands, churns, cake pans, cream pans, butter pots or dishes, chambers, grease lamps, flower pots, lift pumps, water pipes, lids, meat tenderizers, ink stands, chimney pots, chemical wares, and cemetery boundary markers.

Next the process of identifying decorative elements was begun. As the result of preliminary study of the Waynesburg College collection, numerous basic elements variants were recognized. The elements identified were then analyzed as to frequency to determine if the presence or absence of certain elements could be related to local pot-

teries. Also it was hoped that this data would be useful for identifying Southwestern Pennsylvania stoneware from stoneware made elsewhere. The results of this analysis are summarized in Table 5.

It appears that too few of the elements were used with a high enough degree of consistency to allow predicting the manufacture of a piece as having been from a pottery in Southwest Pennsylvania when a certain decorative element is present. The list may only be useful to predict place or area of manufacture when a decorative element used in the area was unique, at least to the region. The mere fact that a piece has a fleur de lis, arrow or

Table 5
Decorative Attributes:
Percentages

Attributes or Motif	%	N= 116
Incising or Ribbing	72.4	
Cobalt Band-Straight	54.3	
Capacity Figure	40.5	
Cobalt Bands—Wavy	29.3	
Cobalt Bands Over Incising or Ribbing	27.6	
Fleur de lis	25.9	
Tulips, Stems, Leaves	23.3	
Vignette	20.7	
Sprigs	19.8	
Short Cobalt Bands	19.8	
Stems and Leaves	17.2	
Ellipse	6.9	
Eagles	6.9	
Circles, Semi-circles, Dots	6.0	
Stars	5.2	
Unidentified Flower, Leaves	4.3	
Unidentified Flower	4.3	
Framing	4.3	
Tulips, Stems	3.5	
Roses, Leaves, Stems	3.5	
Radiating Lines	3.5	
Diamond	3.5	
Shield	3.5	
Triangle	2.6	
Crescent	2.6	
Cross	1.7	
Arrow	1.7	
Spital	1.7	
Pear	1.7	
Dove	1.7	
Leaves	.9	
Tulips	.9	
Roses, Leaves	.9	
Roses	.9	
Unidentified Flower, Leaves	.9	
Compass Star	.9	
Human Figure	.9	
Cornucopia	.9	
Primrose	.9	
Lily	.9	



Figure 1. Canning jar by Hamilton and Jones, Greensboro, Pennsylvania (ca. 1851-1893). Dove; tulip, stem, and leaves; fleur de lis. Stenciled.

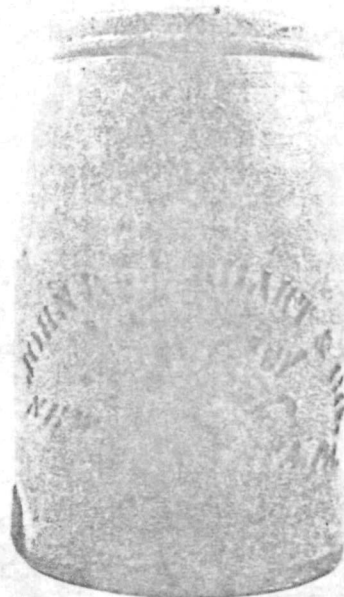


Figure 3. Canning jar by John P. Eberhart, New Geneva, Pennsylvania (1880-ca. 1882). Cornucopia. Stenciled.



Figure 2. Storage jar by J. E. Eneix, New Geneva, Pennsylvania (1874-1876). Sprigs. Stenciled.



Figure 4. Canning jar, Greensboro, Pennsylvania. Pears, stem and leaves. Stenciled. Ribbing.



Figure 5. Canning jar. Human figure. Incising. Hand-painted.



Figure 7. Canning jar. Straight-sided star (incised and filled-in), stem and leaves, cobalt bands-straight, cobalt band over incising, ribbing. Handpainted.



Figure 6. Canning jar by Hamilton and Jones, Greensboro, Pennsylvania (ca. 1851-1893). Shield, fleur de lis, sprigs. Stenciled.



Figure 8. Pitcher. Spiral, ribbing. Stenciled.



Figure 9. Churn (ca. 1850-1870). Tulip, stems, and leaves, incising. Handpainted.



Figure 11. Storage jar by James Hamilton and Co., Greensboro, Pennsylvania (ca. 1851-1880). Eagle, cobalt band-wavy, cobalt bands-straight, vignettes, diamonds, fleur de lis, sprigs, capacity figure, ribbing. Stenciled.



Figure 10. Storage jar by Hamilton and Jones, Greensboro, New Geneva (ca. 1851-1893). Eagle, cobalt bands-wavy, short cobalt bands, stem and leaves, fleur de lis, straight-sided star, ribbing; capacity figure. Stenciled and handpainted.

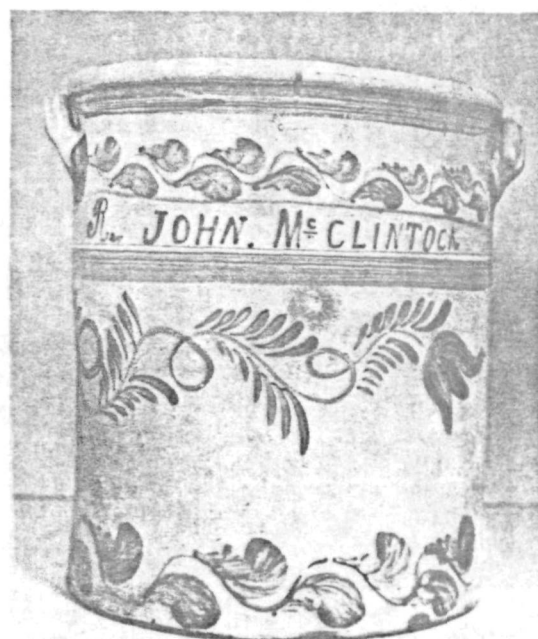


Figure 12. Storage jar by A. and W. Boughner, Greensboro, Pennsylvania (ca. 1859-1868). Stems and leaves; tulips, stems, and leaves; incising, cobalt bands-straight. Handpainted.

sprig on it would not allow drawing the conclusion that the piece was from Southwest Pennsylvania. It may though be possible to establish the local origin of a piece if the presence of a specific style of a decorative element is identified. Testing of this is, however, beyond the scope of the current study.

The decorative element list may have limited predictive value, but it is an extensive list of such elements that appear on the area stoneware. In that vein it can be seen that while many different elements were used, certain elements that were popular elsewhere, e.g., animals; and ships, were never used.

Further, not only were the motifs often in variation with those frequently seen on nineteenth century vessels, but the most usual method of motif application was relatively unique. Of the seven basic methods of motif application seen on the extant vessels: incised, handpainted, molded in relief and applied, outlined with a quill and filled-in by hand painting, slip cup applied, incised and filled-in by hand painting, and stenciled, the dominant technique used locally was stenciling. In fact 60.3% of the sample pieces had at least some stenciling.

Following stenciling in frequency of technique of motif application were handpainting, 56.9%; quill outlining then handpainting, 3.5%; and slip cup, .9%.

An attempt to explain that fact and the occurrence or absence of various attributes is held in abeyance as there is no obvious answer. What is clear from this study is that the stoneware potteries in Fayette, Greene, and Washington counties jointly produced large quantities of gray salt-glazed

stoneware with variously colored slipped interiors and that the majority of the stoneware when decorated was stenciled, and the designs although they can in most instances be identified, were not used exclusively enough to allow pieces to be identified merely because they had certain decorative elements.

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